

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of  
NAKAMURA et al.

Serial No. 09/463,643

Filed: May 1, 2000



Atty. Ref.: CC-925-178

TC/A.U.: 2815

Examiner: Jerome Jackson, Jr.

For: NITRIDE SEMICONDUCTOR DEVICE

\* \* \* \* \*

July 31, 2007

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

Listed on accompanying Form PTO/SB/08a is information that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98.

This statement should not be construed as a representation that a search has been made, or that information more material to the examination of the present patent application does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith. At least one of the boxes below applies to the present application:

1. ☒ This Information Disclosure Statement is being filed within three months of the U.S. filing date OR **the filing of an RCE** OR before the mailing date of a first Office Action on the merits. No statement under 37 C.F.R. § 1.97(e) or fee is required.

a. ☐ Contingent Request to Treat Under 37 C.F.R. § 1.97(c)

In the event a first Office Action has been mailed prior to filing of the present Information Disclosure Statement and the Office Action was mailed more than three months since the filing of the application (for regular

applications not including CPAs or RCEs), the Office is requested to treat the present paper as a submission under 37 C.F.R. § 1.97(c) and charge the undersigned's Deposit Account No. 14-1140 for the fee required by 37 C.F.R. § 1.17(p). The present paper is submitted in duplicate for this purpose.

b. ☐ Contingent Request to Treat Under 37 C.F.R. § 1.97(e)(1)

In the event a first Office Action has been mailed prior to the filing of the present Information Disclosure Statement, and the Office Action was mailed more than three months since the filing of the application (for regular applications not including CPAs or RCEs), the Office is requested to treat the present paper as a submission under 37 C.F.R. § 1.97(e)(1) in that the undersigned hereby states that each item of information contained in this Information Disclosure Statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).

b.1. ☐ Patent Term Adjustment

I hereby certify that each item of information was cited in a communication from a foreign patent office in a counterpart application and that this communication was not received by any individual designated in Section 1.56(c) more than 30 days prior to the filing of the Information Disclosure Statement. 37 C.F.R. §1.704(d).

c. ☐ Contingent Request to Treat Under 37 C.F.R. § 1.97(e)(2)

In the event a first Office Action has been mailed prior to the filing of the present Information Disclosure Statement, and the Office Action was mailed more than three months since the filing of the application (for regular applications not including CPAs or RCEs), the Office is requested to treat the present paper as a submission under 37 C.F.R. § 1.97(e)(2) in that the undersigned hereby states that no item of information in this

Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to my knowledge after making reasonable inquiry, no item of information contained in this Information Disclosure Statement was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).

2. ☐ This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final Rejection or Notice of Allowance.

a. ☐ I hereby state that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1). Contingent Request Under 37 C.F.R. § 1.97(d). In the event a Notice of Allowance or a Final Rejection has been mailed prior to filing this Information Disclosure Statement, the Office is authorized to treat this as a submission under 37 C.F.R. 1.97(d) and charge the undersigned's Deposit Account No. 14-1140 for the fee required by 37 C.F.R. § 1.17(p). The present paper is submitted in duplicate for this purpose.

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b. ☐ I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent

office in a counterpart foreign application, and, to my knowledge after making reasonable inquiry, no item of information contained in this Information Disclosure Statement was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).

c. ☐ Attached is our check in the amount of \$            in payment of the fee under 37 C.F.R. § 1.17(p).

3. ☐ This Information Disclosure Statement is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee 37 C.F.R. § 1.97(d). It is hereby requested that the Information Disclosure Statement be considered. Attached is our check in the amount of \$            in payment of the fee under 37 C.F.R. § 1.17(i).

a. ☐ I hereby state that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).

a.1. ☐ Patent Term Adjustment

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b. ☐ I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to my knowledge after making reasonable inquiry, no item of information contained in this Information Disclosure Statement was known to any individual designated

in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).

4. ☐ Relevance of the non-English language document(s) is discussed in the present specification.

5. ☐ The document(s) was/were cited in a corresponding foreign application. An English language version of the foreign search report or official action is attached for the Examiner's information. See MPEP § 609.

a. ☐ U.S. Patent No. \_\_\_\_\_ is indicated in the foreign search report or Official Action as being in the same patent family and/or the English-language equivalent of \_\_\_\_\_ listed on the attached foreign search report.

6. ☐ A concise explanation of the relevance of the non-English language document(s) appears below:

7. ☐ Copies of the documents were cited by or submitted to the Office in Application No. \_\_\_\_\_, filed \_\_\_\_\_, which is relied upon for an earlier filing date under 35 U.S.C. § 120. Thus, copies of these documents are not attached. 37 C.F.R. § 1.98(d).

8. ☐ The publication date (e.g., month or year) of at least one of the listed documents is not available. For each document in this category, the Office is requested to assume that the year of publication of each listed document is earlier than the effective U.S. filing date and/or any foreign priority date.

9. ☐ The publication date of at least one document is listed on the attached PTO/SB/08a based on information presently available to the undersigned. However, each listed publication date should not be construed as an admission that the information was actually published on the date indicated, and the right to challenge each listed publication date is expressly reserved by Applicant(s).


It is respectfully requested that the Examiner initial and return a copy of the enclosed PTO/SB/08a, and to indicate in the official file wrapper of this patent application that the documents have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 14-1140 referencing docket number CC-925-178.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By: \_\_\_\_\_

  
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**INFORMATION DISCLOSURE  
CITATION**

ATTY. DOCKET NO.

SERIAL NO.

925-178

09/463,643

APPLICANT

NAKAMURA et al.

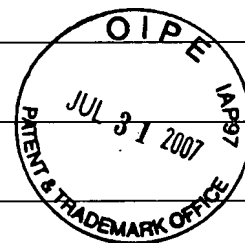
(Use several sheets if necessary)

FILING DATE

GROUP

May 1, 2000

2815


**U.S. PATENT DOCUMENTS**

*EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	5,005,057	04/1991	IZUMIYA et al.			
	5,905,276	05/1999	MANABE et al.			
	5,583,879	12/1996	YAMAZAKI et al.			
	5,646,953	07/1997	NAITO et al.			
	5,776,792	07/1998	NAITO et al.			
	5,804,834	09/1998	SHIMOYAMA et al.			
	6,346,720	02/2002	IYECHIKA et al.			
	6,472,298	10/2002	IYECHIKA et al.			
	5,729,029	03/1998	RUDAZ			
	6,172,382	01/2001	NAGAHAMA et al.			
	6,060,730	05/2000	TSUTSUI			
	6,377,596	04/2002	TANAKA et al.			
	2003/0010993	01/2003	NAKAMURA et al.			

**FOREIGN PATENT DOCUMENTS**

DOCUMENT	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO
JP 2-288371	11/1990	JAPAN			ABSTRACT
JP 3-203388	09/1991	JAPAN			ABSTRACT
JP 4-122070	04/1992	JAPAN			ABSTRACT
JP 6-151963	05/1994	JAPAN			X
JP 7-169701	07/1995	JAPAN			X
JP 7-202346	08/1995	JAPAN			X
JP 7-273048	10/1995	JAPAN			X
JP 7-297494	11/1995	JAPAN			X
JP 8-083954	03/1996	JAPAN			X
JP 8-191171	07/1996	JAPAN			X
JP 8-203834	08/1996	JAPAN			X
JP 8-213651	08/1996	JAPAN			X
JP 8-264833	10/1996	JAPAN			X
JP 9-116130	05/1997	JAPAN			X
JP 9-232629	09/1997	JAPAN			X
JP 9-298341	11/1997	JAPAN			X
JP 10-093137	04/1998	JAPAN			X
JP 10-093194	04/1998	JAPAN			X
JP 10-145004	05/1998	JAPAN			X
JP 10-335757	12/1998	JAPAN			X
JP 11-031842	02/1999	JAPAN			X
JP 11-177175	07/1999	JAPAN			X

\*Examiner

Date Considered

Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Initial a this form with next communication to application.

## SERIAL NO.

**09/463,643**

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[illegible]

	Suemune, "Doping in a superlattice structure: Improved hole activation in wide-gap II-VI materials," J. Appl. Phys., Vol. 67, No. 5 (1990), pp. 2364-2369
	Nakamura et al., "Ridge-geometry InGaN multi-quantum-well-structure laser diodes," Appl. Phys. Lett., Vol. 69, No. 10 (1996), pp. 1477-1479
	Detchprohm et al., "Hydride vapor phase epitaxial growth of a high quality GaN film using a ZnO buffer layer," Appl. Phys. Lett., Vol. 61, No. 22 (1992), pp.2688-2690
	Nakamura et al., "InGaN-Based Multi-Quantum-Well-Structure Laser Diodes," Jpn. J. Appl. Phys. Lett., Vol. 35, Part 2 [1B] (1996), pp. L74-76

Date Considered

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